

Amendments to the Claims:

Please amend claims 21, 27, 29, and 30 herein. Please cancel claims 1-20 and 26. Please note that all claims currently pending and under consideration in the above-referenced application are shown below. Please enter these claims as amended. This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-20 (Canceled)

21. (Currently amended) A method of separating cesium and strontium from an acidic solution, comprising:

providing an acidic solution comprising cesium and strontium;

contacting the acidic solution with a mixed extractant solvent ~~comprising consisting essentially of~~ calix[4]arene-bis-(tert-octylbenzo)-crown-6 ("BOBCalixC6"), 4',4'-(5')-di-(t-butylidicyclo-hexano)-18-crown-6 ("DtBu18C6"), and ~~at least one modifier~~ 1-(2,2,3,3-tetrafluoropropoxy)-3-(4-sec-butylphenoxy)-2-propanol ("CS-7SB") dissolved in a diluent; and removing the cesium and strontium from the acidic solution.

22. (Original) The method of claim 21, wherein providing an acidic solution comprising cesium and strontium comprises providing the acidic solution comprising from approximately 0.5M to approximately 3M nitric acid.

23. (Original) The method of claim 21, wherein contacting the acidic solution with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent comprising from approximately 0.0025M to approximately 0.025M BOBCalixC6.

24. (Original) The method of claim 21, wherein contacting the acidic solution with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent comprising from approximately 0.01M to approximately 0.5M DtBu18C6.

25. (Original) The method of claim 21, wherein contacting the acidic solution with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent comprising from approximately 0.086 M to approximately 0.108 M DtBu18C6.

Claim 26 (Canceled)

27. (Currently amended) The method of ~~claim 26, claim 21~~, wherein contacting the acidic solution with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent comprising from approximately 0.2M to approximately 1.0M Cs-7SB.

28. (Original) The method of claim 21, wherein contacting the acidic solution with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent comprising a diluent that includes an isoparaffinic hydrocarbon.

29. (Currently amended) The method of claim 21, wherein contacting the acidic solution with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent ~~comprising~~ consisting essentially of approximately 0.15M DtBu18C6, approximately 0.007M BOBCalixC6, and approximately 0.75M Cs-7SB modifier dissolved in an isoparaffinic hydrocarbon diluent.

30. (Currently amended) The method of claim 21, wherein contacting the acidic solution with a mixed solvent extractant comprises contacting the acidic solution with the mixed extractant solvent that further comprises ~~triethylamine, tri-n-butyl-phosphate, or mixtures thereof as the at least one modifier~~ triocetylamine.

31. (Original) The method of claim 21, wherein contacting the acidic solution with a mixed extractant solvent comprises forming a first organic phase and a first aqueous phase.

32. (Original) The method of claim 21, wherein contacting the acidic solution with a mixed extractant solvent comprises extracting the cesium and strontium into a first organic phase.

33. (Original) The method of claim 21, wherein removing the cesium and strontium from the acidic solution comprises separating a first organic phase and a first aqueous phase.

34. (Original) The method of claim 21, wherein removing the cesium and strontium from the acidic solution comprises removing the cesium and strontium at a temperature ranging from approximately 1°C to approximately 40°C.

35. (Original) The method of claim 21, wherein removing the cesium and strontium from the acidic solution comprises removing the cesium and strontium at a temperature ranging from approximately 10°C to approximately 15°C.

36. (Original) The method of claim 21, further comprising recovering the mixed extractant solvent, the cesium, and the strontium.

37. (Original) The method of claim 36, wherein recovering the mixed extractant solvent, the cesium, and the strontium comprises contacting a first organic phase with a second aqueous phase.

38. (Original) The method of claim 37, wherein contacting a first organic phase with a second aqueous phase comprises extracting the cesium and strontium into the second aqueous phase.

39. (Original) The method of claim 37, wherein contacting a first organic phase with a second aqueous phase comprises contacting the first organic phase with the second aqueous phase at a temperature ranging from approximately 10°C to approximately 60°C.

40. (Original) The method of claim 37, wherein contacting a first organic phase with a second aqueous phase comprises contacting the first organic phase with the second aqueous phase at a temperature ranging from approximately 20°C to approximately 40°C.

41. (Original) The method of claim 37, wherein contacting a first organic phase with a second aqueous phase comprises contacting the first organic phase with an aqueous solution comprising from approximately 0.001M nitric acid to approximately 0.5M nitric acid.

42. (Original) The method of claim 36, wherein recovering the mixed extractant solvent, the cesium, and the strontium comprises separating a first organic phase and a second aqueous phase.

43. (Original) A method of extracting strontium, comprising:
contacting an acidic solution comprising strontium with a solvent comprising 4',4',(5')-di-(t-butylidicyclo-hexano)-18-crown-6 ("DtBu18C6"), 1-(2,2,3,3-tetrafluoropropoxy)-3-(4-sec-butylphenoxy)-2-propanol ("Cs-7SB"), and an isoparaaffinic hydrocarbon.